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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/591,860 | 09/06/2006 | Meiten Koh | Q96559 | 4402 |
| 23373 7590 09/30/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | | |
| EXAMINER | | | | |
| BUIE, NICOLE M | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1796 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 09/30/2009 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,860

Applicant(s)

KOH ET AL.

Examiner

NICOLE M. BUIE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 15-17 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 15-17, and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/27/2009 has been entered.

Response to Amendment

The amendment filed 08/27/2009 has been entered. Claims 1-9, 15-17, and 20 remain pending.

The indicated allowability of claims 1-3 and 15 is withdrawn in view of the newly discovered reference(s) to Araki et al. (WO 2002/093249, see US 2005/0004253 A1 for citation). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9, 15-17, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-9, 15-17, and 20, the term "ionic liquid type functional material" comprises a compound which may have a charge neutral amino group, while the accepted meaning is "molten salts" as evidenced by the instant specification (See [0005] of the corresponding PG Pub). The term is indefinite because it is unknown how the neutral compound can be an ionic material. For the purpose of this Office Action, "ionic liquid type functional material" will be treated as an aromatic compound which has an amino group and/or salt thereof as required by the claims.

Claim Rejections - 35 USC § 102

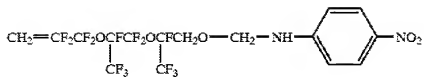
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

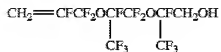
Claims 1-3 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al. (WO 2002/093249 A1, see the English equivalent US 2005/0004253 A1 for citation).

Regarding claims 1-3 and 15, Araki et al. discloses in Preparation Example 10 an allyl ether containing a nonlinear substance in the side chain with the following formula:



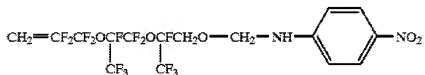
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It appears that there was an obvious error in the above structure wherein the second carbon should have one fluorine atom because the above compound is synthesized from the following compound:

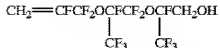


Claims 6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al. (WO 2002/093249 A1, see the English equivalent US 2005/0004253 A1 for citation).

Regarding claims 6 and 9, Araki et al. discloses a fluorine-containing polymer (III) having a moiety exhibiting a nonlinear optical effect in its side chain [0416-0420]. One of the monomers is disclosed in Preparation Example 10 wherein an allyl ether containing a nonlinear substance in the side chain has the following formula:



It appears that there was an obvious error in the above structure wherein the second carbon should have one fluorine atom because the above compound is synthesized from the following compound:



Response to Arguments

Applicant's arguments have been fully considered and are persuasive. The following comments apply:

A) The previous rejection of claims 6 and 9 under 35 USC 102(b) as being anticipated by Morita is withdrawn in light of Applicants' amendment. Morita et al. does not teach or suggest a structural unit represented by the formula (2-2) with D¹-Ry¹ as recited in the instant claims.

Allowable Subject Matter

Claims 7, 8, and 20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 4, 5, 16, and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the closest prior art of record, Araki et al. (WO 2002/093249 A1) does not teach or suggest the fluoroether moiety has an amino group and aromatic ring one end and a basic functional and aromatic group on the other end. Araki et al. does not teach or suggest the structural unit M2 of

instant claim 7 wherein Ry² is an organic group which at least one basic group and contains an aromatic ring and Ra¹ is monovalent organic group.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. M. B./
Examiner, Art Unit 1796
9/16/2009

/Marc S. Zimmer/

Primary Examiner, Art Unit 1796

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